

## WHAT IS CLAIMED IS:

- 1           1.       A motor-driven pump adapted for being submersed in fluid comprising:  
2               an electric motor disposed in a motor housing, the motor containing a rotating shaft  
3       extending to and supporting an impeller;  
4               a motor cover fitted to the motor housing to enclose the motor, at least one of the  
5       motor housing and the motor cover being provided with a pour hole through which a non-  
6       conductive encapsulation material may be poured to encapsulate the motor;  
7               an impeller housing that surrounds the impeller and including a fluid inlet and a  
8       fluid discharge conduit for fluid flow; and  
9               a multistage seal disposed between the motor and the impeller that prevents fluid  
10      from contacting the motor.
- 1           2.       The motor-driven pump of claim 1, wherein the motor cover is fitted on the  
2       motor housing by cooperating latch means.
- 1           3.       The motor-driven pump of claim 1, wherein the non-conductive  
2       encapsulation material is an epoxy.
- 1           4.       The motor-driven pump of claim 1, wherein an impeller cover is secured to  
2       the impeller housing with an o-ring disposed therebetween to prevent fluid from leaking  
3       out from within the interior of the impeller housing.
- 1           5.       The motor-driven pump of claim 1, wherein a void space is provided  
2       between the impeller and the seal to reduce fluid pressure build-up on the seal.
- 1           6.       The motor-driven pump of claim 1, wherein the seal comprises a self-  
2       aligning seal.

1           7.     The motor driven pump of claim 6 wherein:  
2           the self-aligning seal comprises a flexible sheet-like member including an  
3     undersize bore and fitted over the shaft between the impeller and the motor.

1           8.     The motor-driven pump of claim 6, wherein the seal comprises a lip seal  
2     disposed between the self-aligning seal and the motor.

1           9.     The motor-driven pump of claim 8, wherein the seal further comprises a  
2     moisture barrier disposed between the lip seal and the motor.

1           10.    The motor-driven pump of claim 9, wherein:  
2           the moisture barrier comprises grease packing disposed in a cavity formed in a  
3     bracket member of the motor.

1           11.    The motor-driven pump of claim 1 further comprising electrical grounding  
2     circuit that electrically neutralizes the environment in which the motor-driven pump  
3     operates.

1           12.    The motor-driven pump of claim 11, wherein the grounding circuit  
2     comprises a first ground wire attached to the motor and to a wall of the motor housing and  
3     a second ground wire connected on one end of a wall of the motor housing and spaced  
4     from the connection of the first ground wire to the motor housing.

1           13.    The motor-driven pump of claim 11, wherein the motor housing is stainless  
2     steel and resistant to fluids that are highly corrosive.

1           14.     A motor-driven pump capable of being submersed in fluid comprising:  
2                 a polymer-encapsulated motor encased in a motor housing, the motor containing a  
3     rotating shaft extending to and supporting an impeller;  
4                 a motor cover fitted to the motor housing to enclose the motor, the motor cover  
5     being provided with a pour hole through which polymer encapsulation material may be  
6     poured to encapsulate the motor;  
7                 an impeller housing that surrounds the impeller with an inlet and discharge outlet  
8     for fluid flow; and  
9                 a multistage seal disposed between the motor cover and the impeller that prevents  
10    fluid from contacting the motor, the multistage seal comprising a self-aligning first lip  
11    seal, a second lip seal journaled by a member forming part of the motor and a grease  
12    packing moisture barrier.

1           15.     A motor-driven pump adapted for being submersed in fluid comprising:  
2                 an electric motor disposed in a motor housing, the motor containing a rotating shaft  
3     extending to and supporting an impeller;  
4                 a motor cover fitted to the motor housing to enclose the motor, at least one of the  
5     motor housing and the motor cover being provided with a pour hole through which a non-  
6     conductive encapsulation material may be poured to encapsulate the motor;  
7                 an impeller housing that surrounds the impeller and including a fluid inlet and a  
8     fluid discharge conduit for fluid flow;  
9                 a multistage seal disposed between the motor and the impeller that prevents fluid  
10    from contacting the motor, the multistage seal comprising a self-aligning first lip seal, a  
11    second lip seal and a grease packing moisture barrier; and  
12                 an electrical grounding circuit that electrically neutralizes the environment in  
13    which the motor-driven pump operates, wherein the grounding circuit comprises a first  
14    ground wire attached to the motor and to a wall of the motor housing and a second ground  
15    wire connected on one end of a wall of the motor housing and spaced from the connection  
16    of the first ground wire to the motor housing.